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NRO REVIEW COMPLETED

COR-0932

20 SEP 1960

MEMORANDUM FOR: Acting Chief, DPD

SUBJECT : Evaluation of Weather Factors in the CORONA Program

1. The Global Weather Central's (WECEN's) routine evaluations of cloud cover on CORONA Mission 9009, made from actual USSR weather reports, indicated much more extensive cloud cover than actually appeared in the photographs. This difference was assumed to be due to the transparency of certain types of cirrus cloud and to the difference in apparent cumulus cloud cover when viewed from a great altitude rather than from the ground.

2. A direct comparison of weather reports and photographs taken on passes 7, 8 and 9 was made. The above assumptions were confirmed by 20 independent cases and refuted by none. On the basis of the results of this preliminary study a new evaluation of the reported cloud cover on passes 7, 8 and 9 of 9009 was made. Agreement with the photographs was much better, although some differences still remained.

3. Changes which take place in the clouds between the exact time of a weather observation and the time the CORONA vehicle passes overhead preclude a perfect match between reported cloud cover and the photographs. However, further study on the remainder of mission 9009 and future missions will undoubtedly lead to more accurate interpretation of cloud observations made from the ground.

4. An attempt to determine the value of weather forecasts to the CORONA operation was made during the three-day CPX conducted in conjunction with mission 9010. The photo coverage obtained on this hypothetical three-day operation, in which weather forecasts were used in selecting the passes to be photographed, was compared to the coverage which would have been obtained without this selection. That is, with all passes being photographed until the film was expended on pass 22. This latter case would have netted 5,220 linear miles of flight line with less than 6/8 cloud cover. The selective three-day operation would have netted 7440 linear miles of similar flight line coverage. In this exercise, the selective procedure produced a 42.5% increase in useable take.

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Chief, Operations Branch, DPD-DD/P

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DPD/OPS/WX/[] (22 September 1960)

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